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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/791,650

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Yukikatsu Ozaki

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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

ALI, MOHAMMAD M

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

06/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/791,650

Applicant(s)

OZAKI ET AL.

Examiner

Mohammad M. Ali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Stolberg (EP 0889244 A2). Stolberg discloses an ejector comprising a nozzle 2 including a fluid outlet port from which high-speed fluid is jetted, and a nozzle tapered section 4 located at an upstream side of the fluid outlet port, wherein the nozzle tapered section has an inner passage with radial dimension reduced toward the fluid outlet port; and a needle 8 having a needle tapered section disposed in the inner passage, wherein: the needle 8 tapered section has a cross sectional area reduced toward a downstream end of the needle 8; the downstream end of the needle is positioned at a downstream side with respect to the fluid outlet port at the end of the nozzle tapered section 4; and the nozzle tapered section 4 has a taper angle which is equal to or larger than a taper angle of the needle tapered section 4; the nozzle further includes a straight section extending from the fluid outlet port to an upstream side by a predetermined distance; the straight section has an inner radial dimension that is substantially constant; the straight section is arranged at a direct downstream side of the nozzle tapered section; the needle is disposed in the nozzle to define a fluid passage therebetween; the needle 8 tapered section includes a root section and end section downstream of the root section; and the end section has a tapered angle that is

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different from a taper angle of the root section; the taper angle of end section is smaller than the taper angle of the root section; the ejector further comprises an actuator (knurled portion) for displacing the needle 8 in an axial direction of the needle 8 and a mixing portion. See Fig. 1-2, column 3, line 25 to column 5, line 30.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stolberg in view of Takeuchi et al., (6,550,265). Stolberg discloses the invention substantially as claimed as stated above except flat end surface needle, a compressor a radiator, a gas-liquid separator. Takeuchi et al., teach the use of a flat end surface needle, a compressor 100, a radiator 200 and a gas-liquid separator 500 in an ejector cycle system for the purpose of sucking evaporated refrigerant at a lower pressure side and increasing the pressure of the refrigerant to be sucked into a compressor. See Fig. 1. Therefore, it would have been obvious to one having ordinary skill in the art at the

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time the invention was made to modify the ejector of Stolberg in view of Takuchi et al., such that a flat surface end needle, a compressor, a radiator and a gas-liquid separator could be provided in order to in order to feed the compressor with refrigerant with increased pressure.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4, 6-8 and 11-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Sugawara et al., (US 20020106547 A1). Sugawara et al., disclose an ejector comprising a nozzle 32 including a fluid outlet port 52 from which high-speed fluid is jetted, and a nozzle tapered section located at an upstream side of the fluid outlet port 52, wherein the nozzle tapered section has an inner passage with radial dimension reduced toward the fluid outlet port 52; and a needle 33 having a needle tapered section disposed in the inner passage, wherein: the needle tapered section has a cross sectional area reduced toward a downstream end of the needle 33; the downstream end of the needle is positioned at a downstream side with respect to the fluid outlet port 33 at the end of the nozzle tapered section; and the nozzle tapered section has a taper angle which is equal to or larger than a taper angle of the needle tapered section; the nozzle further includes a straight section extending from the fluid outlet port to an upstream side by a predetermined distance; the straight section has an inner radial dimension

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that is substantially constant; the straight section is arranged at a direct downstream side of the nozzle tapered section; the needle 33 is disposed in the nozzle to define a fluid passage therebetween; the needle 33

the ejector further comprises an actuator (knurled portion) for displacing the needle 33 in an axial direction of the needle 33 and a mixing portion. See Fig. 2, Para [0059] to [0062].

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al., in view of Stolberg (EP 0889244). Sugawara et al., disclose the invention substantially as claimed as stated above except a root section on the needle tapered section. Stolberg teaches a root section on the tapered section of the needle which is already stated above. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the nozzle of Sugawara et al., in view of Stolberg such that a needle with root section could be provided in order to function as a desired manner.

Claims 5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawara et al., in view of Takeuchi et al., (6,550,265). Sugawara et al., disclose the invention substantially as claimed as stated above except flat end surface needle, a compressor a radiator, a gas-liquid separator. Takeuchi et al., teach the use of a flat end surface needle, a compressor 100, a radiator 200 and a gas-liquid separator 500 in an ejector cycle system for the purpose of sucking evaporated refrigerant at a lower pressure side and increasing the pressure of the refrigerant to be sucked into a compressor. See Fig. 1. Therefore, it would have been obvious to one having ordinary

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skill in the art at the time the invention was made to modify the ejector of Sugawara et al., in view of Takuchi et al., such that a flat surface end needle, a compressor, a radiator and a gas-liquid separator could be provided in order to in order to feed the compressor with refrigerant with increased pressure.

Response to Arguments

Applicant's arguments filed 05/30/07 have been fully considered but they are not persuasive. The Applicant argued, "Stolberg (EP 0889244 A2) shows in the drawings that the tip end of the needle is upstream of the nozzle outlet. EP 0889244 A2, column 3, lines 53-56 describes that "allowing the needle to extend through and beyond the nozzle 2". However, there is nothing described regarding the needle always being downstream of the nozzle outlet and the above-described features of the present invention with the nozzle jet flow along the outer peripheral surface of the protruded part of the needle." The Examiner disagrees. Stolberg cited, "Relative rotation of needle 8 with respect to the nozzle 2, allowing the needle 8 to extend through and beyond the nozzle 2" (See column 3, lines 53-56). It reveals from the nozzle from Fig 1, Fig. 2 the needle move forward or backward during the normal operation of the system unless some external mechanism or manual operation to turn the nozzle the needle is threadably fixed with the nozzle 2. Therefore, the needle can move forward beyond the nozzle 2 when some individual determines its configuration to have needle end beyond the nozzle and sets its position accordingly by turning the needle with respect to the nozzle. When it is fixed at this position it will constantly remain at this position unless its

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configuration is changed again by turning the needle. Therefore, Stolber reference still valid for rejection of the claims. Apart from the Stolberg, The examiner arranged additional rejections by using reference of Sugawara et al. as stated above. Therefore, rejections are ok. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on 571-272-4808. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


MOHAMMAD M. ALI
PRIMARY EXAMINER